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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ichikai Kamihira

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EXAMINER

HARTMAN JR, RONALD D

ART UNIT

PAPER NUMBER

2121

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/824,462

Applicant(s)

KAMIHIRA, ICHIKAI

Examiner

Ronald D Hartman Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-7, 17-23, 29-43, 50 and 58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-7, 17-23, 29-34, 50 and 58 is/are rejected.
- 7) ☒ Claim(s) 35-43 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 5-7, 17-23, 29-43, 50 and 58 are presented for further examination.

Claim Objections

2. Claim 1, lines 5, 13, 15 and 18 recite, "input date" and this should be "input data".

Claim 17, lines 19 and 22, change "date" to "data".

Claims 1 and 17, line 1, "device" should be changed to "system" since the control device and the control module are not one and the same, that is, they are constructed separately, and therefore what is claimed is not actually a device, per se, but at least two devices of some kind, and therefore a system is what is currently claimed, not a single device, as one would expect by reading the Preamble as currently presented. Also, in line

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 5-6, 23, 17 and 50 are rejected under 35 U.S.C. 102(b) as being adequately anticipated by Nishizawa et al., U.S. Patent No. 5,213,077.

As per claims 5 and 17, Nishizawa et al. teaches a system comprising:

- a characteristic control module (hereafter: CCM) which controls parameters (hereafter: cp's) used by a basic control module (hereafter: BCM), wherein the CCM is provided separately from a control device (hereafter: CD) having the BCM, wherein the BCM outputs values to control a subject, wherein the outputs are based

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upon input data and the cp's outputted from an automatic modification mechanism (hereafter: AMM)(e.g. Figure 10, elements 11 and 16 corresponding to the separate entities, elements 18, 20, 22 and 24 corresponding to the AMM for modifying the fuzzy rules which modify the outputted PID gains to the control device, which corresponds to element 12), the CCM comprising:

- a storage mechanism which has stored therein the cp's associated with characteristic data (e.g. corresponds to the use of rule base 22; Figure 10); and
- a AMM which evaluates current characteristics of operation based on current input data, compares the stored cp's with the current input data and modifies the cp's based on the comparison, thereby outputting the cp's to be used by the BCM (e.g. corresponds to changing the PID gain amounts using fuzzy inferences; C17 L65 – C18 L11).

In other words, the Examiner has interpreted the aforementioned features to be essentially the equivalent of a system comprising a "tuner unit" which is "communicatively coupled" to a controller, wherein controller parameters are modified using the "tuner unit" while the system is operating, wherein the "tuner unit" utilizes fuzzy logic (claims 6 and 20) for determining controller parameter modifications. This system is believed to be adequately anticipated by the system disclosed by Nishizawa et al., specifically Figure 10.

As per claim 6, Nishizawa et al. further teaches the AMM modifying the ratio of the cp's using fuzzy rules (e.g. Figure 10 element 20).

As per claim 23, Nishizawa et al. further teaches the CD having a communication means between the CD and CCM (e.g. Figure 10, the output of element 31 to be received by element 32 adequately contemplates a communication network, per se.)

As per claim 50, Nishizawa et al. further teaches the cp's being received by a network (e.g. Figure 10, the output of element 31 to be received by element 32 adequately contemplates a communication network, per se.)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishizawa et al., as applied to claims 5 and 17 above, in further view of Gudaz et al., U.S. Patent No. 6,510,353.

As per claims 7 and 18, Nishizawa et al. does not specifically teach a user interface that permits a user to accept or not accept each modification of the cp's.

Gudaz teaches a user interface that allows a user to have a graphical depiction of the changes occurring to the control parameters of a system, whereby the user can choose whether to accept the changes or not (e.g. Figures 6-7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Gudaz et al. into the system disclosed by Nishizawa et al. so as to allow an operator the ability to test each desired parameter before implementation so that the system is not adversely affected when the new control parameters are applied, thereby avoiding any potential errors arising from the use of the fuzzy logic control parameter section, and this would have been obvious to one of ordinary skill in the art at the time the invention was made.

As per claim 20, Nishizawa et al. further teaches the AMM modifying the ratio of the cp's using fuzzy rules (e.g. Figure 10 element 20).

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7. Claims 21-22 and 29-34 are rejected under 35 U.S.C. 103(a) as being obvious over Nishizawa et al., as applied to claims 5 and 17 above, in further view of obviousness.

As per claim 21, although Nishizawa et al. does not specifically teach attaching and detaching the CD from the CCM, it is a feature that is obvious to Nishizawa et al. since clearly if a communication connection exists, as Figure 10 clearly depicts, there must be a way to connect the two sections (e.g. elements 16 and 11) and therefore, by virtue of logic, a mean to disconnect would inherently exist as well, and therefore these features are believed to be adequately anticipated by the communication connection between elements 11 and 16 of Figure 10, and this would have been obvious to one of ordinary skill in the art at the time the invention was made.

As per claim 22, the use of computers, within the confines of automotive control system, are notoriously well known in the art as they provide quick computational means for operating complex system in a timely fashion so that the operations of a automobile may be optimized. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated a computing device within the confines of the control device associated with the vehicle, that is, Figure 10 element 11, for the purpose of allowing the PID control parameters to be utilized in a timely manner so that the engine characteristics respond in an optimized manner in accordance with the computations determined by the tuner unit, and this would have been obvious to one of ordinary skill in the art at the time the invention was made.

As per claims 29-34, although Nishizawa et al. teaches the use of the fuzzy tuning unit for tuning PID parameters for an internal combustion engine, Nishizawa et al. does not specifically teach input data being representative of travel characteristics, vehicle speed, throttling, fuel injection, engine braking or exhaust noise level characteristics. However, in light of the fact the Nishizawa et al. is directed towards

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controlling an internal combustion engine, and since all of the aforementioned features may be linked to the functions of the engine, they all represent obvious variations of the described "engine data". That is, all of the aforementioned engine parameters would obviously benefit from a system which allows for control parameters to be manipulated while the system is in operation, thereby ensuring proper system (i.e. engine) responses so that the system can operate to the best of its abilities, in other words, in the most optimized manner possible, and this would have been obvious to one of ordinary skill in the art at the time the invention was made.

8. Claims 19 and 58 are rejected as being unpatentable over Nishizawa et al., in view of Gudaz et al., in further view of Ulyanov et al., U.S. Patent Application No. 2003/0093392.

As per claims 19 and 58, Nishizawa et al.'s combined system does not specifically teach the use of candidates or the use of evolutionary computations.

Ulyanov et al. teaches the use of candidates or the use of evolutionary computations for use in a system which allows for simple, yet effective, control strategy for use on a nonlinear system (e.g. [0035], [0042], [0075] and [0142]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the use of evolutionary computations as well as candidates so that a non-linear control system may be effectively controlled, and this would have been obvious to one of ordinary skill in the art at the time the invention was made.

Allowable Subject Matter

9. Claims 35-43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As per claims 35-43, specifically dependent claims 35, 36 and 40, the prior art of record fails to teach or adequately suggest a control methodology comprising all of the

functions and or features of claim 5, wherein the input data is in reference to weather conditions, body conditions of a user or the ID of a user operating the system, in combination with the other claimed features and or limitations as claimed.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald D Hartman Jr. whose telephone number is (571) 272 - 3684. The examiner can normally be reached on Mon. - Fri., 11:30 am - 8:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached at (571) 272 - 3687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ronald D Hartman Jr.

Patent Examiner

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* R0H


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